IN THE CLAIMS:

Please cancel Claims 1-17, 25 and 32 without prejudice or disclaimer of the subject matter recited therein.

Please amend Claims 18-21, 26, 27, 28, 30 and 33 as follows.

Claims 1-17. (Cancelled).

18. (Currently Amended) An image processing apparatus which is connected to a print unit adapted to print an image, and can output an image to be printed to the print unit, comprising:

an image sensing unit adapted to capture a real space image;

a generation unit adapted to generate a virtual space image according to a viewpoint position and orientation ~~on a coordinate system shared by real and virtual spaces to have~~ of said image sensing unit ~~as a viewpoint on the virtual space~~;

a composition unit adapted to ~~superimpose~~ obtain a mixed reality space image by combining the real space image captured by said image sensing unit and the virtual space image generated by said generation unit;

a display unit adapted to display a mixed reality space image obtained by said composition unit; and

~~instruction unit adapted to give, to the print unit, an output instruction of the mixed reality space image composited by said composition unit, and~~

~~in that said generation unit has a plurality of calculation methods and sequences for generating the virtual space image, and~~

~~when the instruction is received from said instruction unit, said generation unit re-generates a virtual space image using a second calculation method and sequence, which are different from a first calculation method and sequence used to generate the virtual space image, said composition unit re-composites a mixed reality space image from the re-generated virtual space image and the real space image, and the print unit prints the re-composited mixed reality space image on a medium.~~

an output unit adapted to output a mixed reality space image, which is obtained by said composition unit, to the print unit in response to an input of a print instruction,

wherein said generation unit generates a virtual space image to be displayed by said display unit according to a first procedure, and said generation unit generates a virtual space image to be outputted by said output unit according to a second procedure which is different from the first procedure.

19. (Currently Amended) ~~An image processing~~ The apparatus according to claim 18, wherein said generation unit generates a virtual space image to be outputted by said output unit according to the second procedure, if the print instruction is inputted after said generation unit generates a virtual space image to be displayed by said display unit. ~~which is connected to print unit adapted to print an image, and can output an image to be printed to the print unit, comprising:~~

~~image sensing unit adapted to capture a real space image;~~

~~generation unit adapted to generate a virtual space image according to a viewpoint position and orientation on a coordinate system shared by real and virtual spaces to have said image sensing unit as a viewpoint on the virtual space;~~

~~composition unit adapted to superimpose the real space image captured by said image sensing unit and the virtual space image generated by said generation unit;~~

~~display unit adapted to display a mixed reality space image obtained by said composition unit; and~~

~~instruction unit adapted to give, to the print unit, an output instruction of the mixed reality space image composited by said composition unit, and~~

~~in that said generation unit has a plurality of data sets for generating the virtual space image, and~~

~~when the instruction is received from said instruction unit, said generation unit re-generates a virtual space image using a second data set, which is different from a first data set used to generate the virtual space image, said composition unit re-composites a mixed reality space image from the re-generated virtual space image and the real space image, and the print unit prints the re-composited mixed reality space image on a medium.~~

20. (Currently Amended) The apparatus according to claim 18, wherein a pixel size of one side of the virtual space image generated by said generation unit ~~assumes an~~

~~arbitrary~~ is a value ~~which has, as an upper limit,~~ within a product of a length of one side and a resolution of an image that ~~the~~ said print unit can output.

21. (Currently Amended) The apparatus according to claim 18, further comprising a management unit adapted to manage state information of the real and virtual spaces, and in that said management unit updates the state information of the virtual space in accordance with input information or at each predetermined timing, and said generation unit successively generates virtual space images in accordance with the updated state information of the real and virtual spaces.

22. (Original) The apparatus according to claim 21, wherein said management unit is an independent apparatus connected to said image processing apparatus via a network, and the state information of the virtual space updated by said management unit can be received by image processing apparatuses which are equivalent to said image processing apparatus, and are connected to the network.

23. (Original) The apparatus according to claim 18, wherein said apparatus can be simultaneously used by at least one user, and has said image sensing unit, said generation unit, said composition unit, said display unit, and detection unit adapted to detect a viewpoint position and visual axis direction of a user, which are prepared for each user.

24. (Original) The apparatus according to claim 23, wherein said display unit, or said display unit and said image sensing unit, forms or form a head-mounted display device to be mounted on a head of the user.

Claim 25. (Cancelled).

26. (Currently Amended) A computer readable storage medium storing a computer program ~~of claim 25~~ to control an image processing apparatus connected to a print unit adapted to print an image, and capable of outputting an image to be printed to the print unit, said storage medium encoded with a computer program comprising:

code to capture a real space image with an image sensing unit;

code to generate a virtual space image with a generation unit according to a viewpoint position and orientation of the image sensing unit;

code to obtain a mixed reality space image with a composition unit by combining the real space image captured by the image sensing unit and the virtual space image generated by the generation unit;

code to display a mixed reality space image obtained by the composition unit on a display unit; and

code to output on an output unit a mixed reality space image, which is obtained by the composition unit, to the print unit in response to an input of a print instruction, wherein the generation unit generates a virtual space image to be displayed by the display unit according to a first procedure, and the generation unit generates a virtual space image to be outputted by the output unit according to a second procedure which is different from the first procedure.

27. (Currently Amended) An image processing apparatus which is connected to a print unit adapted to print an image, and can output an image to be printed to the print unit, comprising:

an image sensing unit adapted to capture a real space image;

a generation unit adapted to generate a virtual space image according to a viewpoint position and orientation ~~on a coordinate system shared by real and virtual spaces to have~~ of said image sensing unit ~~as a viewpoint on the virtual space~~;

a composition unit adapted to ~~superimpose~~ obtain a mixed reality space image by combining the real space image captured by said image sensing unit and the virtual space image generated by said generation unit;

a display unit adapted to display a mixed reality space image obtained by said composition unit;

~~instruction unit adapted to give, to the print unit, an output instruction of the mixed reality space image composited by said composition unit; and~~

an output unit adapted to output a mixed reality space image, which is obtained by said composition unit, to the print unit in response to an input of a print instruction; and

a determination unit adapted to check a positional relationship among said image sensing unit, a real space object, and a virtual space object on the coordinate system, and determining whether or not the real space object is occluded by the virtual space object in the mixed reality space image, ~~and~~

~~in that said generation unit re-generates a virtual space image using a second calculation method and sequence, which are different from a first calculation method and sequence used to generate the virtual space image, in accordance with a result of said determination unit, said composition unit re-composites a mixed reality space image from the re-generated virtual space image and the real space image, and the print unit prints the re-composited mixed reality space image on a medium.~~

wherein said generation unit generates a virtual space image to be displayed by said display unit according to a first procedure, and said generation unit generates a virtual space image to be outputted by said output unit, based on a determination result of said determination unit, according to a second procedure which is different from the first procedure.

28. (Currently Amended) The apparatus according to claim 27, further comprising a management unit adapted to manage state information of the real and virtual spaces, and in that said management unit updates the update information of the virtual space in

accordance with input information or at each predetermined timing, and said generation unit successively generates virtual space images in accordance with the updated state information of the real and virtual spaces.

29. (Original) The apparatus according to claim 28, wherein said management unit is an independent apparatus connected to said image processing apparatus via a network, and the state information of the virtual space updated by said management unit can be received by image processing apparatuses which are equivalent to said image processing apparatus, and are connected to the network.

30. (Currently Amended) The apparatus according to claim 27, wherein said apparatus can be simultaneously used by at least one observer, and has said image sensing unit, said generation unit, said composition unit, said display unit, and a detection unit adapted to detect a viewpoint position and visual axis direction of an observer, which are prepared for each observer.

31. (Original) The apparatus according to claim 30, wherein said display unit, or said display unit and said image sensing unit, forms or form a head-mounted display device to be mounted on a head of the user.

Claim 32. (Cancelled).

33. (Currently Amended) A computer readable storage medium storing a computer program ~~of claim 32~~ to control an image processing apparatus connected to a print unit adapted to print an image, and capable of outputting an image to be printed to the print unit, comprising:

code to capture a real space image with an image sensing unit;

code to generate a virtual space image with a generation unit according to a viewpoint position and orientation of the image sensing unit;

code to obtain a mixed reality space image with a composition unit by combining the real space image captured by the image sensing unit and the virtual space image generated by the generation unit;

code to display a mixed reality space image obtained by the composition unit on a display unit;

code to output on an output unit a mixed reality space image, which is obtained by the composition unit, to the print unit in response to an input of a print instruction;

code to check, with a determination unit, a positional relationship among the image sensing unit, a real space object, and a virtual space object on the coordinate system, and determining whether or not the real space object is occluded by the virtual space object in the mixed reality space image,

wherein the generation unit generates a virtual space image to be displayed by the display unit according to a first procedure, and the generation unit generates a virtual space image to be outputted by the output unit, based on determination result of the determination unit, according to a second procedure which is different from the first procedure.

34. (New) An image processing method to be executed by an image processing apparatus which is connected to a print unit adapted to print an image, and can output an image to be printed to the print unit, comprising:

an image sensing step of capturing a real space image using an image sensing unit;

a generation step of generating a virtual space image according to a viewpoint position and orientation of the image sensing unit;

a composition step of obtaining a mixed reality space image by combining the captured real space image and the generated virtual space image;

a displaying step of displaying the obtained mixed reality space image; and

an output step of outputting the obtained mixed reality space image to the print unit in response to an input of a print instruction, wherein

a virtual space image to be displayed is generated according to a first procedure, and a virtual space image to be outputted is generated according to a second procedure which is different from the first procedure.

35. (New) An image processing method to be executed by an image processing apparatus which is connected to a print unit adapted to print an image, and can output an image to be printed to the print unit, comprising:

an image sensing step of capturing a real space image using an image sensing unit;

a generation step of generating a virtual space image according to a viewpoint position and orientation of the image sensing unit;

a composition step of obtaining a mixed reality space image by combining the captured real space image and the generated virtual space image;

a displaying step of displaying the obtained mixed reality space image;

an output step of outputting the obtained mixed reality space image to the print unit in response to an input of a print instruction, and

a determination step to check a positional relationship among the image sensing unit, a real space object, and a virtual space object on the coordinate system, and determining whether or not the real space object is occluded by the virtual space object in the mixed reality space image, wherein

a virtual space image to be displayed is generated according to a first procedure, and a virtual space image to be outputted is generated according to a second procedure which is different from the first procedure.